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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/735,990	12/15/2003	Carey Lotzer	121824.00005	4137

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EXAMINER	
YOUNG, BRIAN K	

ART UNIT	PAPER NUMBER
2819	

DATE MAILED: 06/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

H·A

Office Action Summary	Application No.	Applicant(s)	
	10/735,990	LOTZER, CAREY	
	Examiner	Art Unit	
	Brian Young	2819	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *the application filed 12/15/03*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-78* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-48 and 53-78* is/are allowed.

6)☒ Claim(s) *49 and 50* is/are rejected.

7)☒ Claim(s) *51 and 52* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *7/1/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 49 and 50 are rejected under 35 U.S.C. 102(b) as being anticipated by Rosen et al.

Rosen et al disclose (fig.3a-3b) energy separation means for receiving a pre-transform signal (60); means for buffering the pre-transform signal (74); and means (79) for receiving the buffered signal and dividing the buffered signal into at least one energy separated pulse band (88-91).

Rosen et al recites (col6, ln.24-col.7, ln.20) "FIGS. 3a and 3b which together are a block diagram of a synthetic aperture radar system. A coherent pulse transmitter 58 responds to a swept oscillator 60 to develop coherent chirped output pulses of radio frequency (RF) energy at a desired PRF **(pulse repetition frequency)**, which are applied through a duplexer unit 62 to an antenna 64 for transmission into space. The RF output pulses applied to the antenna 64 are radiated as an illuminating beam 66, which is directed to a desired surface area to be mapped. The RF energy reflected to the antenna 64 from scatterers or surface scatterers within the beam 66 is applied from the antenna 64 through the duplexer unit 62 to a mixer 68 which translates the **received RF return energy to an intermediate frequency band.** The output signal from the mixer 68 after suitable amplification is then split in an I-Q mixer 70, as is well known in the art. **The I-Q mixer 70 which provides in-phase and quadrature phase detection splits the data**

into an in-phase channel and a quadrature phase channel, the data being then transferred as I (in-phase) and Q (quadrature phase) data in the processor system until video detection. An A/D (analog-to-digital) unit 72 samples, at a desired sample rate, the I and Q data derived from each received pulse and converts the IF signals to a time sequence of pairs of I-Q digital words of the desired precision, each I-Q word having a binary amplitude value. **The return data is then applied to a buffer storage unit 74 which may store several input pulses of data or sequences of I-Q words derived from a transmitted pulse.** An azimuth pre-filter 73 is provided and may include an azimuth presumming unit which may combine corresponding I-Q words for a selected number of pulses; when AZ presumming is utilized. A dotted composite lead 76 shows that in some systems in which the concept of the invention may be utilized, azimuth presumming may not be required. The azimuth pre-filter 73 forms the passband 16 of FIG. 1 and at a selected PRF has a passband determined to prevent cross range ambiguity and undesired folding of the spectrum as is well known in the art. The I-Q data is then passed from the presum unit 73 or from the composite lead 76 to a range dechirp unit 78 and, in turn, to the intrapulse subswath FFT unit 79 where the data is filtered into a plurality of subswath channels as a function of frequency, the data having a greater frequency at greater range as a result of the chirped transmitted pulses. The subswath FFT unit 79 may, for example, include a separate signal processor that forms a plurality of FFT filters in response to the data from each transmitted pulse to provide K, samples I-Q words for each subswath. In some systems in accordance with the invention the range dechirp unit 78 may precede the azimuth filter unit 73.

In the illustrated system, eight subswath channels of data are provided by the subswath FFT unit 79 with each two adjacent channels of subswaths SSW.sub.0 -SSW.sub.7 being coupled to a different processor of programmable signal processors 80-83. The system is not to be limited to each processor handling two subswaths of data but each processor such as 80-83 may process any desired number of subswaths of data depending on the processing speed desired.

Regarding claim 50, the significance of the bands is determined by the filtering components.

3. Claims 1-48 and 53-78 are allowed.

4. Claims 51 and 52 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Neumann , et al 5,828,497 discloses a system (50) for separating and combining frequency bands (64, 74, 78) from a beam (62) of electromagnetic energy adapted for use with a beam of white light (62) having a first (64), second (74) and third (78) frequency band. The inventive system (50) includes a first surface (58) for transmitting the first frequency band (64) and reflecting the second (70, 78) and third (70, 74) frequency bands. A second surface (60) reflects the second frequency band (74) and transmits the third (78) frequency band. A transparent support structure (52, 54, 56) supports the first surface (58) and the second surface (60) in a

pre-determined orientation that provides for a low angle of incidence (66, 72) of electromagnetic energy impinging on the first surface (58) and the second surface (60) to minimize undesirable polarization effects. In a specific embodiment, the angle (66, 72) is 22.5 degrees. The predetermined orientation includes the first surface (58) angled with respect to the second surface (60) so that the first (64), second (74), and third (78) frequency bands have first (64), second (74), and third (78) separate paths respectively. In the illustrative embodiment, the support structure (52, 54, 56) includes a glass pentaprism (52). The first surface (58) has a dichroic coating on a first lateral surface (58) of the pentaprism (52) and the second surface (60) has a dichroic coating on the other lateral surface (60). The support structure (52, 54, 56) further includes a first (54) and second (56) glass surface attachment attached to the first (58) and second (60) surface respectively.

Jayant , et al 5,559,900 discloses compression of signals achieved through a simple decision of whether or not to encode certain frequency bands; not how well to encode all of the frequency bands. Based on the input signal and on a preselected perceptual model, a "just noticeable difference" (jnd) noise spectrum is computed. This spectrum is applied to a selector where it is used in the decision to select a chosen number of frequency bands of the input signal. The bands selected are the bands with the greatest energy relative to the jnd energy in the same band. Each of the selected bands is encoded and transmitted to the receiver. Both analog and digital realizations are presented.

Swaminathan 4,956,871 discloses a sub-band speech coding arrangement divides the speech spectrum into sub-bands and allocates bits to encode the time frame interval samples of each sub-band responsive to the speech energies of the sub-bands. The sub-band samples are quantized according to the sub-band energy bit allocation and the time frame quantized samples and speech energy signals are coded. A signal representative of the residual difference between the each time frame interval speech sample of the sub-band and the corresponding quantized speech sample of the sub-band is generated. The quality of the sub-band coded signal is improved by selecting the sub-bands with the largest residual differences, producing a vector signal from the sequence of residual difference signals of each selected sub-band, and matching the sub-band vector signal to one of a set of stored Gaussian codebook entries to generate a reduced bit code for the selected vector signal. The coded time frame interval quantized signals, speech energy signals and reduced bit codes for the selected residual differences are combined to form a multiplexed stream for the speech pattern of the time frame interval.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Young whose telephone number is 571-272-1816. The examiner can normally be reached on Mon-Fri 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Tokar can be reached on 571-272-1812. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian Young
Primary Examiner
Art Unit 2819

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